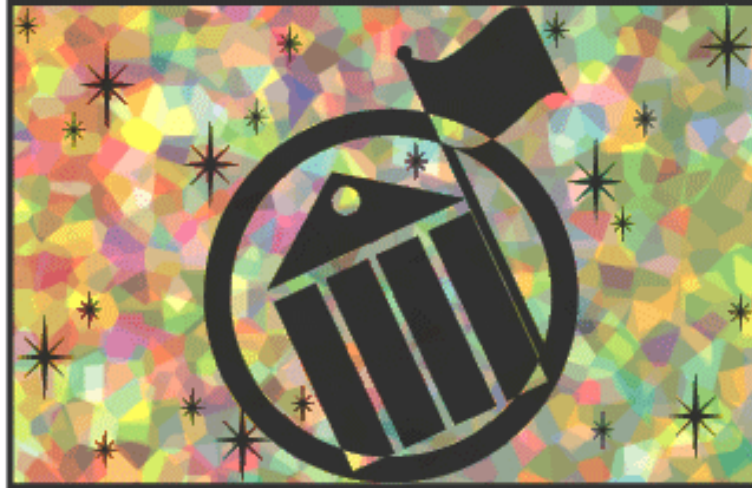


LoTi Technology Use Profile



Name of Organization:

Lower Merion School District

Number of Participants:

479

Data Collection Dates:

Current Survey Period:

Jul 01, 2006 through Jun 30, 2007

Previous Survey Period:

Jul 01, 2005 through Jun 30, 2006



Introduction

A technology use profile was recently conducted to ascertain each participant's current level of technology implementation using the Level of Technology Implementation (LoTi) Questionnaire. This questionnaire measures three critical components related to supporting or implementing the instructional use of computers at your site: LoTi (Levels of Technology Implementation), PCU (Personal Computer Use), and CIP (Current Instructional Practices). This profile focused on the use of technology as an interactive learning medium because this particular component has the greatest and lasting impact on classroom pedagogy and is the most difficult to implement and assess. Such information will enable questionnaire sponsors to target funding sources and provide professional development opportunities directed at moving participants to a higher level of technology implementation in the classroom, and in doing so, better prepare students for the challenges facing them in a highly competitive, technology-oriented society.

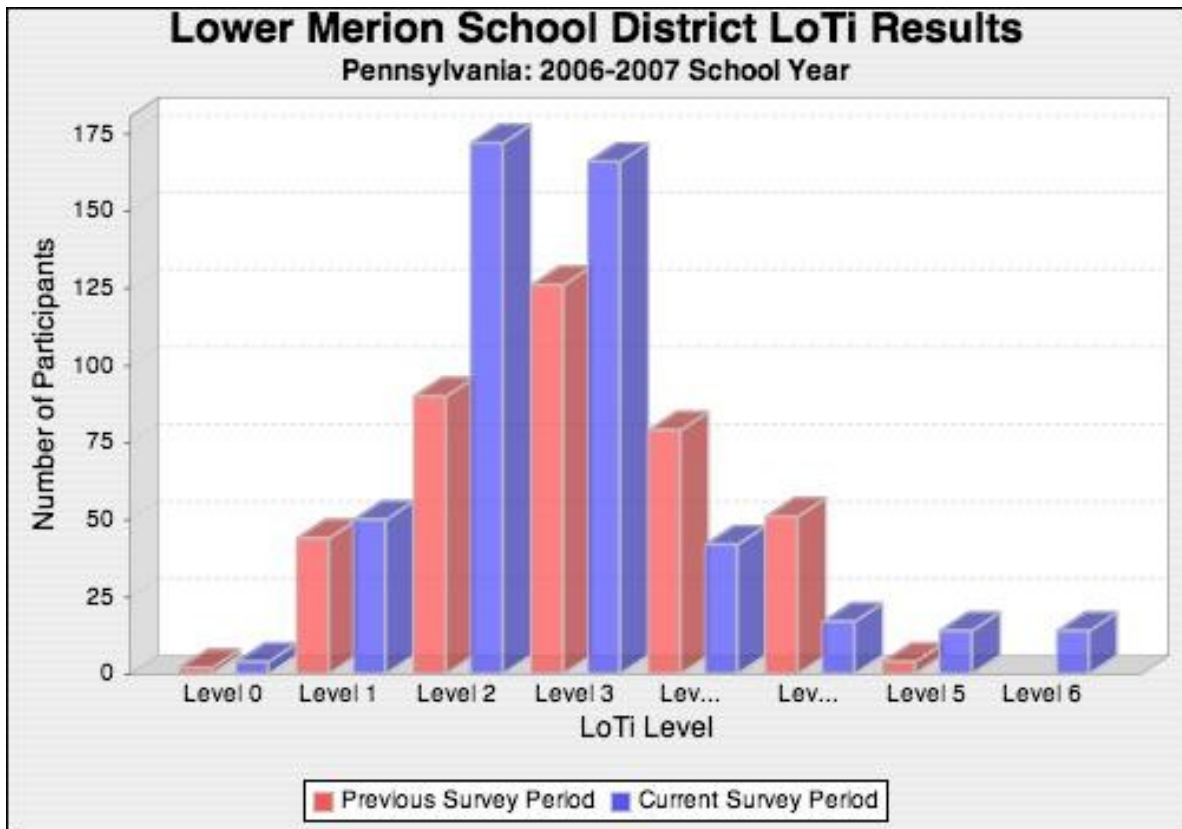
The questionnaire generated a profile for each participant in three domains: Level of Technology Implementation (LoTi), Personal Computer Use (PCU), and Current Instructional Practices (CIP). The Level of Technology Implementation (LoTi) profile approximated the degree to which each participant either supports or implements the instructional uses of technology in a classroom setting. The Personal Computer Use (PCU) profile addressed each participant's comfort and proficiency level with using computers (e.g., troubleshooting simple hardware problems, using multimedia applications) at home or in the workplace. The Current Instructional Practices (CIP) profile revealed each participant's support for or implementation of instructional practices consistent with a learner-based curriculum design (e.g., learning materials determined by the problem areas under investigation, multiple assessment strategies integrated authentically throughout the curriculum, teacher as co-learner/facilitator, focus on learner-based questions).

The questionnaire did not consider the complexity of software applications used at the site or the frequency of their use. The information provided was based exclusively on the perceptions of the LoTi Questionnaire participants. The subsequent data analysis including all findings, goals, and recommendations are based on these returns.

Figure 1: Level of Technology Implementation (LoTi)

Figure 1 displays the Level of Technology Implementation (LoTi) ranking for the 479 participants from Lower Merion School District. The LoTi profile approximates the degree to which each participant is either supporting or implementing the instructional uses of technology in a classroom setting. Based on their responses, the median LoTi Level for Lower Merion School District corresponded with a Level 3 (Infusion).

A Level 3 (Infusion) implies that technology-based tools including databases, spreadsheet and graphing packages, multimedia and desktop publishing applications, and internet use complement selected instructional events (e.g., field investigation using spreadsheets/graphs to analyze results from local water quality samples) or multimedia/web-based projects at the analysis, synthesis, and evaluation levels. Though the learning activity may or may not be perceived as authentic by the student, emphasis is, nonetheless, placed on higher levels of cognitive processing and in-depth treatment of the content using a variety of thinking skill strategies (e.g., problem-solving, decision-making, reflective thinking, experimentation, scientific inquiry).



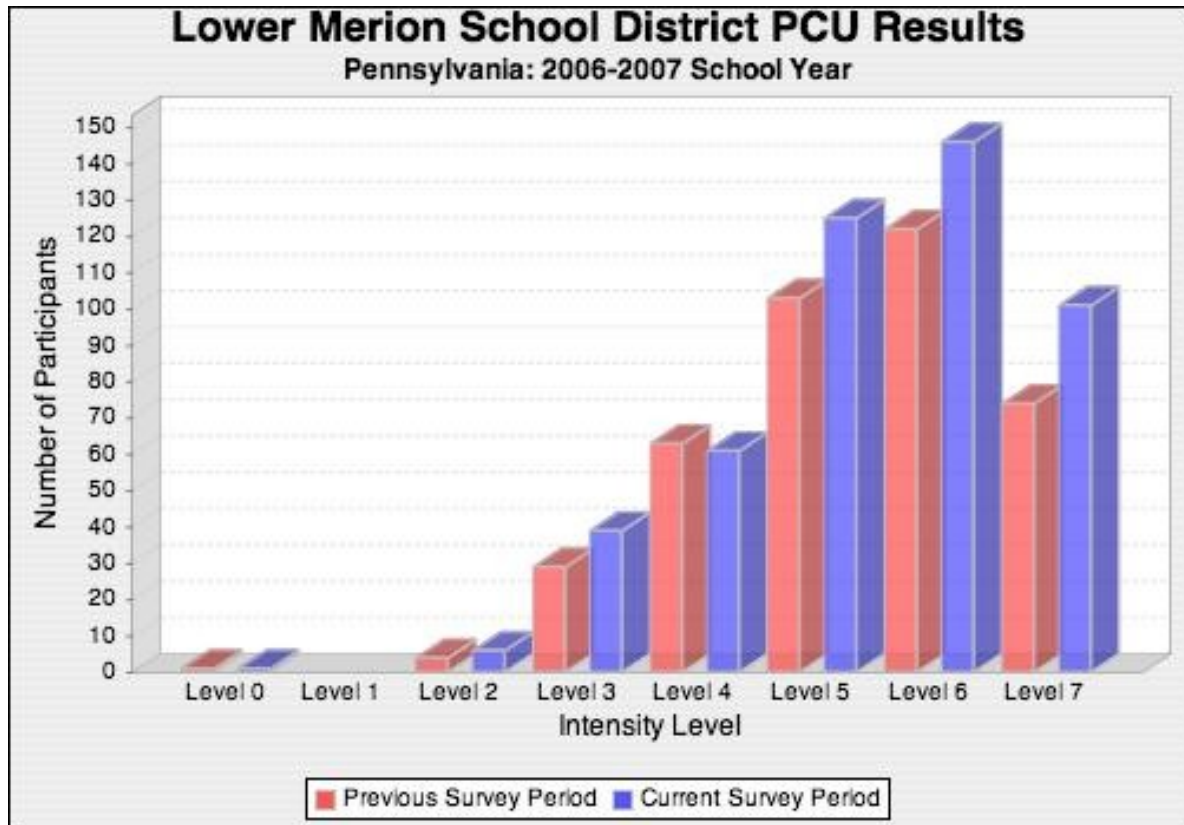
Median LoTi Score: Level 3 (Infusion)

Mode LoTi Score: Level 2 (Exploration)

Figure 2: Personal Computer Use (PCU)

Figure 2 displays the perceptions of the Lower Merion School District participants toward questions involving their personal computer use. The PCU profile addresses each participant's comfort and proficiency level with using computers (e.g., troubleshooting simple hardware problems, using multimedia applications) at home or in the workplace. Based on their responses, the median PCU Level for Lower Merion School District corresponded with a PCU Intensity of Level 6 (Very True of Me Now).

A PCU Intensity Level 6 indicates that the participant demonstrates high to extremely high skill level with using computers for personal use. Participants at Intensity Level 6 are sophisticated in the use of most, if not all, multimedia, productivity, desktop publishing, and web-based applications. They typically serve as "troubleshooters" for others in need of assistance and sometimes seek certification for achieving selected technology-related skills.



Median PCU Score: PCU Intensity Level 6 (Very True of Me Now)

Mode PCU Score: PCU Intensity Level 6 (Very True of Me Now)

Intensity Levels Legend

Level 0 - Level 2: Not True of Me Now

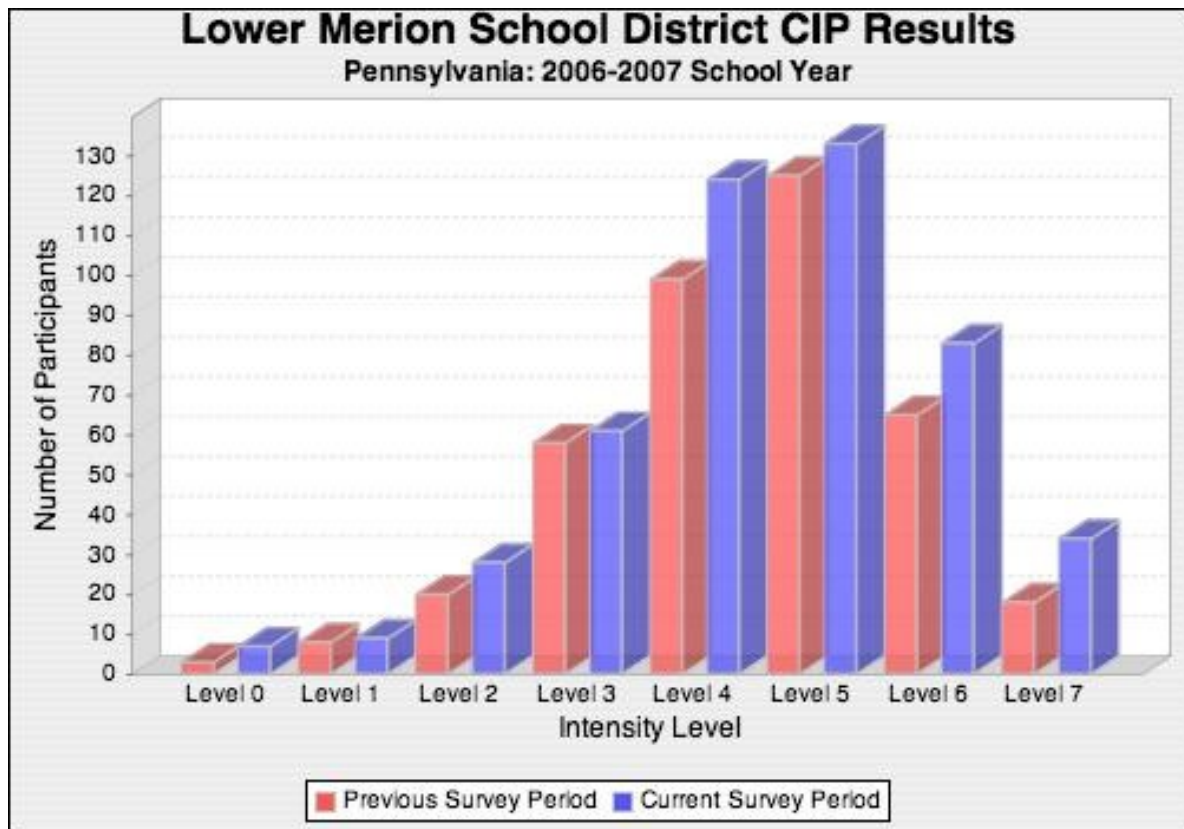
Level 3 - Level 5: Somewhat True of Me Now

Level 6 - Level 7: Very True of Me Now

Figure 3: Current Instructional Practices (CIP)

Figure 3 displays the perceptions of the Lower Merion School District participants toward questions involving their current instructional practices. The CIP profile reveals each participant's support for or implementation of instructional practices consistent with a learner-based curriculum design (e.g., learning materials determined by the problem areas under investigation, multiple assessment strategies integrated authentically throughout the curriculum, teacher as co-learner/facilitator, focus on learner-based questions). Based on their responses, the median CIP Level for Lower Merion School District corresponded with a CIP Intensity Level 5 (Somewhat True of Me Now).

At a CIP Intensity Level 5, the participant's instructional practices tend to lean more toward a learner-based approach. The essential content embedded in the standards emerges based on students "need to know" as they attempt to research and solve issues of importance to them using critical thinking and problem-solving skills. The types of learning activities and teaching strategies used in the learning environment are diversified and driven by student questions. Both students and teachers are involved in devising appropriate assessment instruments (e.g., performance-based, journals, peer reviews, self-reflections) by which student performance will be assessed. However, the use of teacher-directed activities (e.g., lectures, presentations, teacher-directed projects) may surface based on the nature of the content being addressed and at the desired level of student cognition.



Median CIP Score: CIP Intensity Level 5 (Somewhat True of Me Now)

Mode CIP Score: CIP Intensity Level 5 (Somewhat True of Me Now)

Intensity Levels Legend

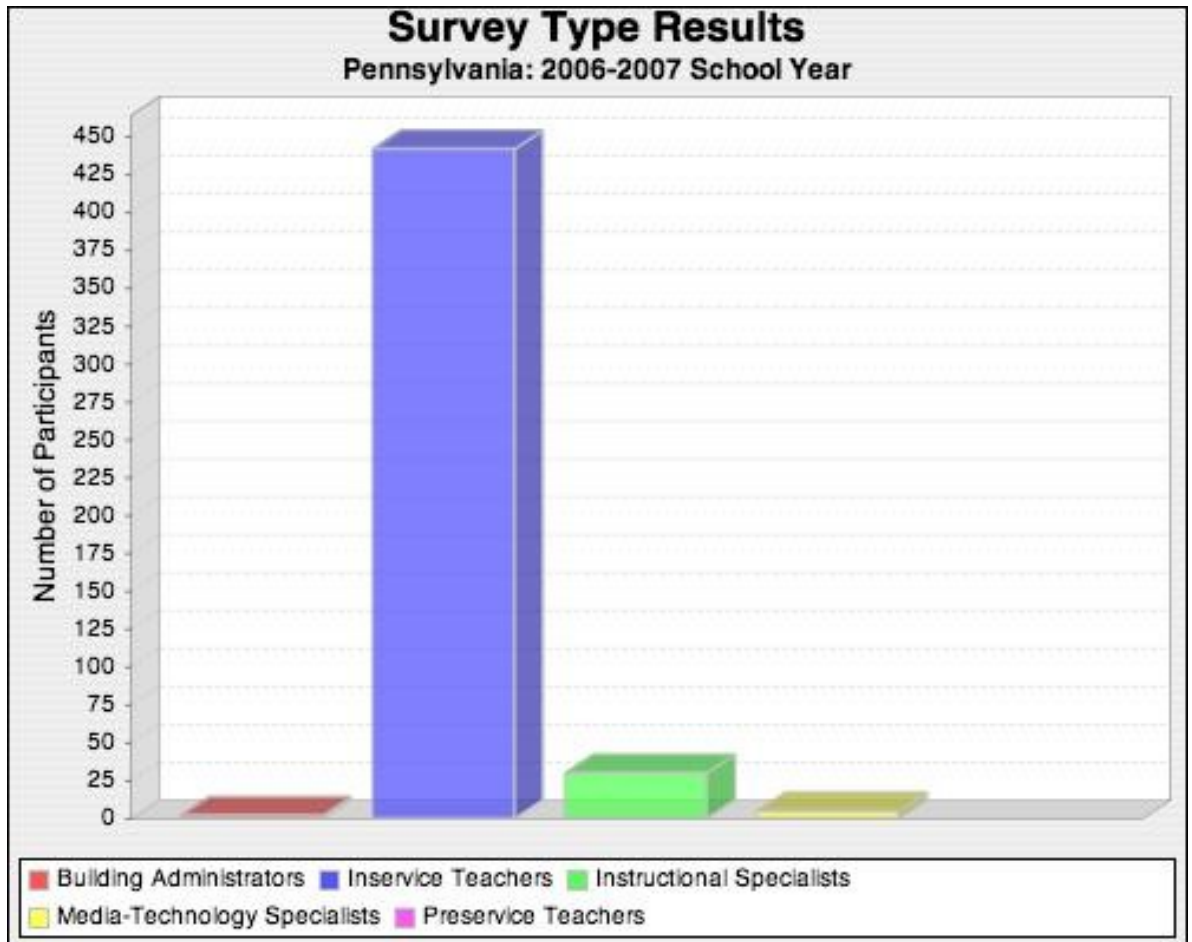
Level 0 - Level 2: Not True of Me Now

Level 3 - Level 5: Somewhat True of Me Now

Level 6 - Level 7: Very True of Me Now

Figure 4: Survey Type

Figure 4 compares the number of participants who completed the LoTi Questionnaire by Survey Type throughout Lower Merion School District. Based on their responses, approximately 92% of participants (442 participants) reported the Survey Type as "Inservice Teachers". Additionally, 6% of participants (30 participants) responded "Instructional Specialists"; 1% of participants (5 participants) responded "Media-Technology Specialists"; less than 1% of participants responded "Building Administrators"; and no participants responded "Preservice Teachers" to the question of Survey Type.





LoTi Findings

			Previous LoTi Assessment	Current LoTi Assessment
LoTi Level	Description	# Participants	% Participants	% Participants
Level 0	There is no visible evidence of computer access or instructional use of computers in the classroom.	4	1%	1%
Level 1	Available classroom computer(s) are used primarily for teacher productivity (e.g., email, word processing, grading programs).	50	11%	10%
Level 2	Student technology projects (e.g., designing web pages, research via the internet, creating multimedia presentations) focus on the content under investigation.	172	23%	36%
Level 3	Tool-based applications (e.g., graphing, concept-mapping) are primarily used by students for analyzing data, making inferences, and drawing conclusions.	166	32%	35%
Level 4a	The use of outside resources and/or interventions aid the teacher in developing challenging learning experiences using available classroom computers.	42	0%	9%
Level 4b	Teachers can readily design learning experiences with no outside assistance that empower students to identify and solve authentic problems using technology.	17	1%	4%
Level 5	Teachers actively elicit technology from outside entities to expand student experiences directed at problem-solving, issues resolution, and student action.	14	0%	3%
Level 6	Computers provide a seamless and almost transparent medium for information queries, problem-solving, and/or product development.	14	0%	3%
Access to Computers	Percent of participants indicating they <i>HAVE</i> access to computers for instructional purposes.	478	100%	100%
Target Technology Level	Participants indicating they implement technology in their respective classrooms at the Target Technology Level (LoTi Level 4b) or above.	45	1%	9%



LoTi Findings

Approximately 9% of Lower Merion School District participants (45 participants) completing the Level of Technology Implementation (LoTi) Questionnaire self-assessed themselves at the Target Technology Level as defined by the National Education Technology Standards (NETS) and Technology Standards for School Administrators (TSSA). This level is characterized by technology use embedded in challenging and engaging learning experiences that promote problem-solving, critical thinking, and self-directed learning.

Approximately 47% of the 479 Lower Merion School District participants were clustered in Levels 0 through 2. These levels represent the lower portion of the LoTi Framework (see Appendices) and focus primarily on teacher's use of productivity tools, student use of tutorial programs, and "project-based" learning opportunities at the knowledge/comprehension level.

Though 100% of Lower Merion School District participants reported having instructional access to computers for teacher and student use, approximately 99% of these same participants indicated that they felt comfortable using computers at home and in the workplace (e.g., accessing email, creating multimedia products, troubleshooting computer problems).

Approximately 91% of Lower Merion School District educators indicated that they either supported or implemented one or more attributes of a learner-centered curriculum with or without a computer. A learner-centered curriculum includes attributes such as a focus on multiple assessment strategies, an emphasis on higher order thinking skills, and the creation of a problem-based learning environment. Research has found strong links between computers used in conjunction with these attributes and higher student achievement based on standardized test scores.



LoTi Goals

Move 17% of the staff member(s) positioned at a Level 3 implementation of technology to a Level 4a during the current school year. This recommendation is consistent with these staff members current scores for Current Instructional Practices (CIP) and Personal Computer Use (PCU).

Move 100% of the staff member(s) positioned at a Level 0 implementation of technology to a Level 2 during the current school year. This recommendation is consistent with these staff members current scores for Current Instructional Practices (CIP) and Personal Computer Use (PCU).

Additional goal statements that target other participants at their respective level of technology implementation should be considered based on available financial and personnel resources.



LoTi Recommendations

Consolidate the group's technology, instruction, assessment courses and inservices into a single staff development program based on the Levels of Technology Implementation framework. This will enable participants to visualize the symbiotic relationship among instruction, assessment, and technology implementation. Simply knowing how to use a specific technology application does not automatically push a participant to a higher level of technology use. Moving participants to a higher level of technology implementation requires a personal commitment to changing one's paradigm about existing instruction and assessment practices (e.g., moving from traditional paper and pencil forms of student assessment to alternative, multi-dimensional forms of assessment) regardless of one's skill level with software applications.

Ensure that each classroom teacher from your group has at least one functional computer and printer in their classroom for instructional purposes. Within your group, 100% of participants indicated that they have access to computers, but even participants who indicated they have computer access may not have a functional computer and printer in their classroom. According to the LoTi Questionnaire, "computer access" means that a staff member and/or student can use or borrow a computer within the school building for instructional purposes; including computers in the classroom, computer labs, computers on carts, general access computers in the library, or something similar.

Provide staff development that models specific strategies and techniques for integrating higher-order thinking skills with the available classroom computers using tool-based applications (e.g., spreadsheets, graphs, multimedia, databases, concept-mapping, internet tools). This recommendation is targeted at moving participants to Level 3 relating to their level of technology implementation.

Provide staff development that increases participants confidence and competence with designing Level 4b (Target Technology) instructional modules using a constructivist, experiential-based approach to curriculum development. This recommendation is targeted at (1) moving participants to a Level 4a implementation of technology, (2) improving the perceptions of Level 4a participants regarding their ability to support or integrate technology at a Level 4a, and (3) moving participants to a Level 4b relating to their level of technology implementation.

Review existing districtwide professional development programs in light of the results from this study. Currently, 47% of the survey participants self-assessed themselves at Levels 0-2, yet close to 82% of these same participants indicated that they were implementing one or more of the attributes of a learner-centered curriculum. It is respectfully recommended that stakeholders consider new approaches and/or modify existing approaches to districtwide professional development so that educators can make better connections between technology use and student authentic problem-solving in the classroom. This recommendation is targeted at moving lower level survey participants to Level 3.

Level of Technology Implementation (LoTi) Framework

Level 0 - Nonuse: Nonuse implies there is a perceived lack of access to technology-based tools (e.g., computers) or a lack of time to pursue electronic technology implementation. Existing technology is predominately text-based (e.g., ditto sheets, chalkboard, overhead projector).

Level 1 - Awareness : Awareness implies that the use of technology-based tools is either (1) one step removed from the classroom teacher (e.g., integrated learning system labs, special computer-based pull-out programs, computer literacy classes, central word processing labs), (2) used almost exclusively by the classroom teacher for classroom and/or curriculum management tasks (e.g., taking attendance, using grade book programs, accessing email, retrieving lesson plans from a curriculum management system or the internet) and/or (3) used to embellish or enhance teacher-directed lessons or lectures (e.g., multimedia presentations).

Level 2 - Exploration: Exploration implies that technology-based tools supplement the existing instructional program (e.g., tutorials, educational games, basic skill applications) or complement selected multimedia and/ or web-based projects (e.g., internet-based research papers, informational multimedia presentations) at the knowledge/comprehension level. The electronic technology is employed either as extension activities, enrichment exercises, or technology-based tools and generally reinforces lower cognitive skill development relating to the content under investigation.

Level 3 - Infusion: Infusion implies that technology-based tools including databases, spreadsheet and graphing packages, multimedia and desktop publishing applications, and internet use complement selected instructional events (e.g., field investigation using spreadsheets/graphs to analyze results from local water quality samples) or multimedia/web-based projects at the analysis, synthesis, and evaluation levels. Though the learning activity may or may not be perceived as authentic by the student, emphasis is, nonetheless, placed on higher levels of cognitive processing and in-depth treatment of the content using a variety of thinking skill strategies (e.g., problem-solving, decision-making, reflective thinking, experimentation, scientific inquiry).

Level 4a - Integration (Mechanical): Integration (Mechanical) implies that technology-based tools are integrated in a mechanical manner that provides rich context for students' understanding of the pertinent concepts, themes, and processes. Heavy reliance is placed on prepackaged materials and/or outside resources (e.g., assistance from other colleagues), and/or interventions (e.g., professional development workshops) that aid the teacher in the daily management of their operational curriculum. Technology (e.g., multimedia, telecommunications, databases, spreadsheets, word processing) is perceived as a tool to identify and solve authentic problems as perceived by the students relating to an overall theme/concept. Emphasis is placed on student action and on issues resolution that require higher levels of student cognitive processing and in-depth examination of the content.

Level 4b - Integration (Routine): Integration (Routine) implies that technology-based tools are integrated in a routine manner that provides rich context for students' understanding of the pertinent concepts, themes, and processes. At this level, teachers can readily design and implement learning experiences (e.g., units of instruction) that empower students to identify and solve authentic problems relating to an overall theme/concept using the available technology (e.g., multimedia applications, internet, databases, spreadsheets, word processing) with little or no outside assistance. Emphasis is again placed on student action and on issues resolution that require higher levels of student cognitive processing and in-depth examination of the content.

Level 5 - Expansion: Expansion implies that technology access is extended beyond the classroom. Classroom teachers actively elicit technology applications and networking from other schools, business enterprises, governmental agencies (e.g., contacting NASA to establish a link to an orbiting space shuttle via internet), research institutions, and universities to expand student experiences directed at problem-solving, issues resolution, and student activism surrounding a major theme/concept. The complexity and sophistication of the technology-based tools used in the learning environment are now commensurate with (1) the diversity, inventiveness, and spontaneity of the teacher's experiential-based approach to teaching and learning and (2) the students' level of complex thinking (e.g., analysis, synthesis, evaluation) and in-depth understanding of the content experienced in the classroom.

Level 6 - Refinement: Refinement implies that technology is perceived as a process, product (e.g., invention, patent, new software design), and/or tool for students to find solutions related to an identified "real-world" problem or issue of significance to them. At this level, there is no longer a division between instruction and technology use in the classroom. Technology provides a seamless medium for information queries, problem-solving, and/or product development. Students have ready access to and a complete understanding of a vast array of technology based tools to accomplish any particular task at school. The instructional curriculum is entirely learner-based. The content emerges based on the needs of the learner according to his/her interests, needs, and/or aspirations and is supported by unlimited access to the most current computer applications and infrastructure available.

Personal Computer Use (PCU) Framework

PCU Intensity Level 0: A PCU Intensity Level 0 indicates that the participant does not feel comfortable or have the skill level to use computers for personal use. Participants at Intensity Level 0 rely more on the use of overhead projectors, chalkboards, and/or traditional paper/pencil activities than using computers for conveying information or classroom management tasks.

PCU Intensity Level 1: A PCU Intensity Level 1 indicates that the participant demonstrates little skill level with using computers for personal use. Participants at Intensity Level 1 may have a general awareness of various technology-related tools such as word processors, spreadsheets, or the internet, but generally are not using them.

PCU Intensity Level 2: A PCU Intensity Level 2 indicates that the participant demonstrates little to moderate skill level with using computers for personal use. Participants at Intensity Level 2 may occasionally browse the internet, use email, or use a word processor program; yet, may not have the confidence or feel comfortable troubleshooting simple "technology" problems or glitches as they arise. At school, their use of computers may be limited to a grade book or attendance program.

PCU Intensity Level 3: A PCU Intensity Level 3 indicates that the participant demonstrates moderate skill level with using computers for personal use. Participants at Intensity Level 3 may begin to become "regular" users of selected applications such as internet browsers, email, or a word processor program. They may also feel comfortable troubleshooting simple "technology" problems such as rebooting a machine or hitting the "Back" button on an internet browser, but mostly rely on technology support staff or others to assist them with any troubleshooting issues.

PCU Intensity Level 4: A PCU Intensity Level 4 indicates that the participant demonstrates moderate to high skill level with using computers for personal use. Participants at Intensity Level 4 commonly use a broader range of software applications including multimedia (e.g., Microsoft Powerpoint), spreadsheets, and simple database applications. They typically have the confidence and are able to troubleshoot simple hardware, software, and/or peripheral problems without assistance from technology support staff.

PCU Intensity Level 5: A PCU Intensity Level 5 indicates that the participant demonstrates high skill level with using computers for personal use. Participants at Intensity Level 5 are commonly able to use the computer to create their own web pages, produce sophisticated multimedia products, and/or effortlessly use common productivity applications (e.g., Microsoft Excel, FileMaker Pro), desktop publishing software, and web-based tools. They are also able to confidently troubleshoot most hardware, software, and/or peripheral problems without assistance from technology support staff.

PCU Intensity Level 6: A PCU Intensity Level 6 indicates that the participant demonstrates high to extremely high skill level with using computers for personal use. Participants at Intensity Level 6 are sophisticated in the use of most, if not all, multimedia, productivity, desktop publishing, and web-based applications. They typically serve as "troubleshooters" for others in need of assistance and sometimes seek certification for achieving selected technology-related skills.

PCU Intensity Level 7: A PCU Intensity Level 7 indicates that the participant demonstrates extremely high skill level with using computers for personal use. Participants at Intensity Level 7 are expert computer users, troubleshooters, and/or technology mentors. They typically are involved in training others on any technology-related tasks and are usually involved in selected support groups from around the world that allow them access to answers for all technology-based inquiries they may have.

Current Instructional Practices (CIP) Framework

CIP Intensity Level 0: A CIP Intensity Level 0 indicates that one or more questionnaire statements were not applicable to the participant's current instructional practices.

CIP Intensity Level 1: At a CIP Intensity Level 1, the participant's current instructional practices align exclusively with a subject-matter based approach to teaching and learning. Teaching strategies tend to lean toward lectures and/or teacher-led presentations. The use of curriculum materials aligned to specific content standards serves as the focus for student learning. Learning activities tend to be sequential and uniform for all students. Evaluation techniques focus on traditional measures such as essays, quizzes, short-answers, or true-false questions. Student projects tend to be teacher-directed in terms of identifying project outcomes as well as requirements for project completion.

CIP Intensity Level 2: Similar to a CIP Intensity Level 1, the participant at a CIP Intensity Level 2 supports instructional practices consistent with a subject-matter based approach to teaching and learning, but not at the same level of intensity or commitment. Teaching strategies tend to lean toward lectures and/or teacher-led presentations. The use of curriculum materials aligned to specific content standards serves as the focus for student learning. Learning activities tend to be sequential and uniform for all students. Evaluation techniques focus on traditional measures such as essays, quizzes, short-answers, or true-false questions. Student projects tend to be teacher-directed in terms of identifying project outcomes as well as requirements for project completion.

CIP Intensity Level 3: At a CIP Intensity Level 3, the participant supports instructional practices aligned somewhat with a subject-matter based approach to teaching and learning—an approach characterized by sequential and uniform learning activities for all students, teacher-directed presentations, and/or the use of traditional evaluation techniques. However, the participant may also support the use of student-directed projects that provide opportunities for students to determine the "look and feel" of a final product based on specific content standards.

CIP Intensity Level 4: At a CIP Intensity Level 4, the participant may feel comfortable supporting or implementing either a subject-matter or learning-based approach to instruction based on the content being addressed. In a subject-matter based approach, learning activities tend to be sequential, student projects tend to be uniform for all students, the use of lectures and/or teacher-directed presentations are the norm as well as traditional evaluation strategies. In a learner-based approach, learning activities are diversified and based mostly on student questions, the teacher serves more as a co-learner or facilitator in the classroom, student projects are primarily student-directed, and the use of alternative assessment strategies including performance-based assessments, peer reviews, and student reflections are the norm.

CIP Intensity Level 5: At a CIP Intensity Level 5, the participant's instructional practices tend to lean more toward a learner-based approach. The essential content embedded in the standards emerges based on students "need to know" as they attempt to research and solve issues of importance to them using critical thinking and problem-solving skills. The types of learning activities and teaching strategies used in the learning environment are diversified and driven by student questions. Both students and teachers are involved in devising appropriate assessment instruments (e.g., performance-based, journals, peer reviews, self-reflections) by which student performance will be assessed. However, the use of teacher-directed activities (e.g., lectures, presentations, teacher-directed projects) may surface based on the nature of the content being addressed and at the desired level of student cognition.

CIP Intensity Level 6: Similar to a CIP Intensity Level 7, the participant at a CIP Intensity Level 6 supports instructional practices consistent with a learner-based approach, but not at the same level of intensity or commitment. The essential content embedded in the standards emerges based on students "need to know" as they attempt to research and solve issues of importance to them using critical thinking and problem-solving skills. The types of learning activities and teaching strategies used in the learning environment are diversified and driven by student questions. Students, teacher/facilitators, and occasionally parents are all involved in devising appropriate assessment instruments (e.g., performance-based, journals, peer reviews, self-reflections) by which student performance will be assessed.

CIP Intensity Level 7: At a CIP Intensity Level 7, the participant's current instructional practices align exclusively with a learner-based approach to teaching and learning. The essential content embedded in the standards emerges based on students "need to know" as they attempt to research and solve issues of importance to them using critical thinking and problem-solving skills. The types of learning activities and teaching strategies used in the learning environment are diversified and driven by student questions. Students, teacher/facilitators, and occasionally parents are all involved in devising appropriate assessment instruments (e.g., performance-based, journals, peer reviews, self-reflections) by which student performance will be assessed.



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Inquiries

For any further inquiries, please contact the National Business Education Alliance (NBEA) by any means listed below or visit the LoTi Connection to learn more about the Levels of Technology Implementation:

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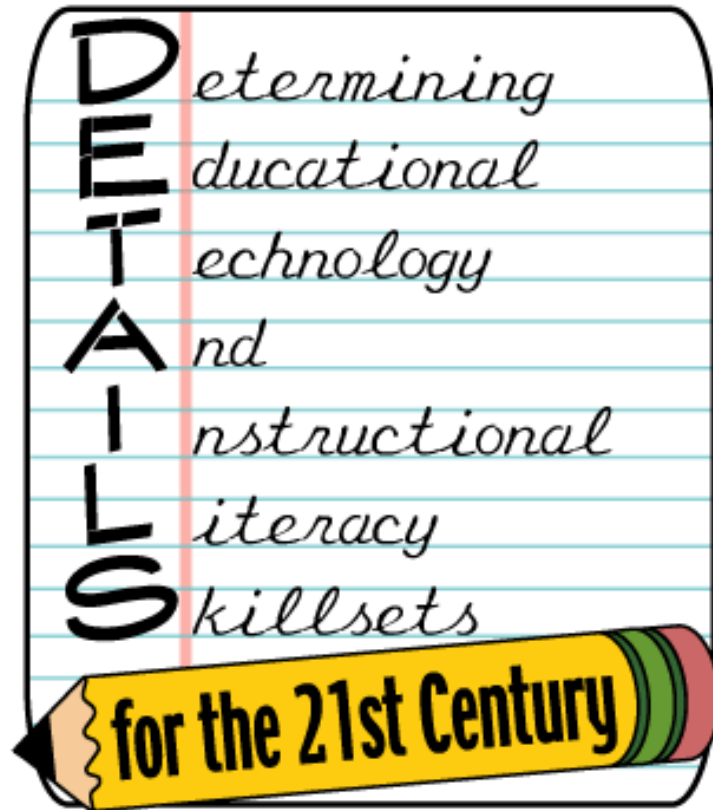
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Name of Organization:

Lower Merion School District

Number of Participants:

479

Data Collection Dates:

Jul 01, 2006 through Jun 30, 2007



Introduction

DETAILS (Determining Educational Technology and Instructional Literacy Skillsets) for the 21st Century represents a set of 5 (five) empirically-validated professional development categories aligned with the latest research on teaching and learning with technology. Collectively, they can help a school building or district create a customized and differentiated staff development program for its professional staff that targets improved student achievement, increased student engagement, and higher order cognitive processing in the classroom.

DETAILS also provides a pathway for classrooms to become 21st century learning environments. These 21st Century Skills (Figure 1) emphasize the importance of individuals communicating with diverse audiences, solving problems and making informed decisions, and becoming self-directed and self-motivated learners and citizens. The five empirically-validated skillsets comprising DETAILS include:

- Proficiency with Technology Use
- Student Influences on Instructional Practices
- Using Technology for Complex Thinking Projects
- Locating Resources and/or Assistance to Increase Existing Classroom Technology Use
- Overcoming Challenges to Beginning Classroom Technology Use

The enclosed data summarizes your organization's DETAILS for the 21st Century Profile based on your professional staff's responses to the online DETAILS for the 21st Century Questionnaire. The information provided was based exclusively on the perceptions and behaviors of the DETAILS Questionnaire participants. The subsequent professional development priorities are based on these returns.

Figure 1: 21st Century Skills

GLOBAL AWARENESS

Students need a deeper understanding of the thinking, motivations, and actions of people from different cultures and countries in order to successfully navigate and respond to communities and workplaces extending beyond their neighborhoods. Key elements of Global Awareness include a student's ability to:

- Use 21st century skills to understand and address global issues
- Learn from and work collaboratively with individuals representing diverse cultures, religions and lifestyles in a spirit of mutual respect and open dialogue in personal, work and community contexts
- Master non-English language skills as a tool for understanding other nations and cultures

CIVIC LITERACY

Students need to understand, analyze, and participate in government and in community, both globally and locally, in order to shape the circumstances that impact their daily lives. Key elements of Civic Literacy include a student's ability to:

- Be an informed citizen to participate effectively in government
- Exercise the rights and obligations of citizenship at local, state, national and global levels
- Understand the local and global implications of civic decisions
- Apply 21st century skills to make intelligent choices as a citizen

FINANCIAL, ECONOMIC, AND BUSINESS LITERACY

There is a growing demand on people to understand business processes, entrepreneurial spirit, and the economic forces that drive today's economy. Key elements of Financial, Economic, and Business Literacy include a student's ability to:

- Make appropriate personal economic choices
- Understand the role of the economy and the role of business in the economy
- Apply appropriate 21st century skills to function as a productive contributor within an organizational setting
- Integrate oneself within and adapting continually to our nation's evolving economic and business environment

LEARNING SKILLS: INFORMATION AND COMMUNICATION SKILLS

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Creativity and intellectual curiosity: Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- Communication skills: Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- Self-direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.

Figure 1: 21st Century Skills (continued)

LEARNING SKILLS: THINKING AND PROBLEM-SOLVING SKILLS

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Critical thinking and systems thinking: Exercising sound reasoning in understanding and making complex choices, understanding the interconnections among systems.
- Problem identification, formulation and solution: Ability to frame, analyze and solve problems.

LEARNING SKILLS: INTERPERSONAL AND SELF-DIRECTIONAL SKILLS

Students need to think critically, analyze information, comprehend new ideas, communicate, collaborate, solve problems, and make sound decisions. Some critical elements of these thinking and learning skills are:

- Interpersonal and collaborative skills: Demonstrating teamwork and leadership; adapting to varied roles and responsibilities; working productively with others; exercising empathy; respecting diverse perspectives.
- Self-direction: Monitoring one's own understanding and learning needs, locating appropriate resources, transferring learning from one domain to another.
- Creativity and intellectual curiosity: Developing, implementing and communicating new ideas to others, staying open and responsive to new and diverse perspectives.
- Social responsibility: Acting responsibly with the interests of the larger community in mind; demonstrating ethical behavior in personal, workplace and community contexts.
- Accountability and adaptability: Exercising personal responsibility and flexibility in personal, workplace and community contexts; setting and meeting high standards and goals for one's self and others; tolerating ambiguity.

INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) LITERACY

Technology has become an essential tool for the realization of learning and thinking skills in today's knowledge economy. Key elements of ICT Literacy include use of ICT in service of:

- Information and media literacy skills: Analyzing, accessing, managing, integrating, evaluating and creating information in a variety of forms and media. Understanding the role of media in society.
- Communication skills: Understanding, managing and creating effective oral, written and multimedia communication in a variety of forms and contexts.
- Interpersonal and self-direction skills: Becoming more productive in accomplishing tasks and developing interest in improving own skills.

Figure 2: DETAILS for the 21st Century Profile

Figure 2 displays the DETAILS for the 21st Century professional development priority areas for the participants from Lower Merion School District. Based on their responses to the DETAILS Questionnaire, Using Technology for Complex Thinking Projects was determined to have the highest-level need for professional development while Proficiency with Technology Use was determined to have the lowest-level need for professional development. It is highly recommended that staff development planners use the data from the five empirically-validated skillsets comprising DETAILS to offer professional development courses, workshops, seminars, or mentoring opportunities that address the highest priority areas identified for Lower Merion School District.

As you review the individual priorities for professional development in the ensuing pages, it is recommended that your school, district, or region align existing professional development offerings (e.g., courses, seminars, webinars, mentoring opportunities, workshops) with the specific DETAILS Skillsets. These categories have been empirically-validated to provide school systems with a roadmap to close the achievement gap, promote 21st century skills, and elevate existing technology use in the classroom. This process will enable classroom teachers to make a connection between their individual DETAILS Profiles for Professional Development and staff development opportunities provided by your school system.

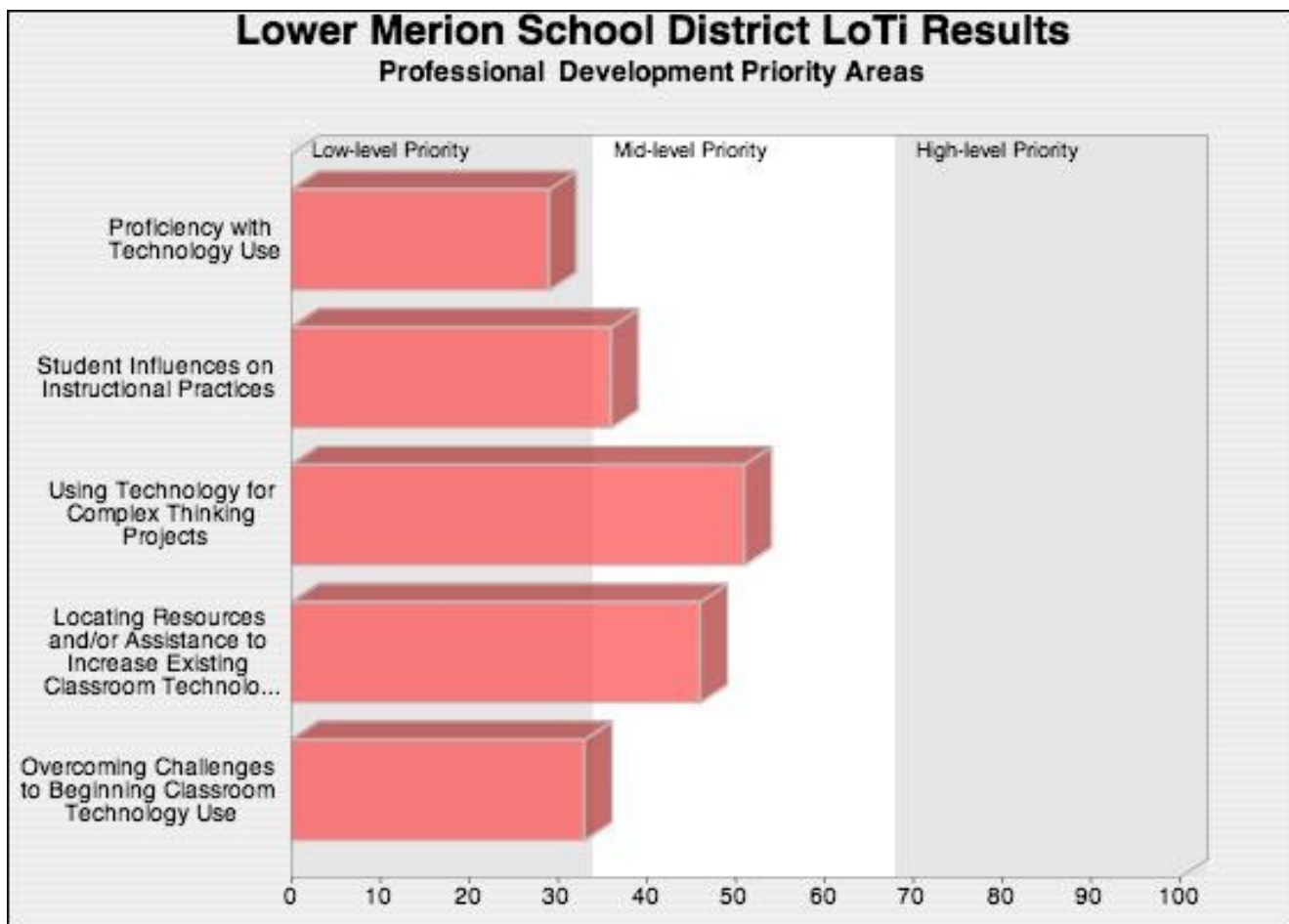
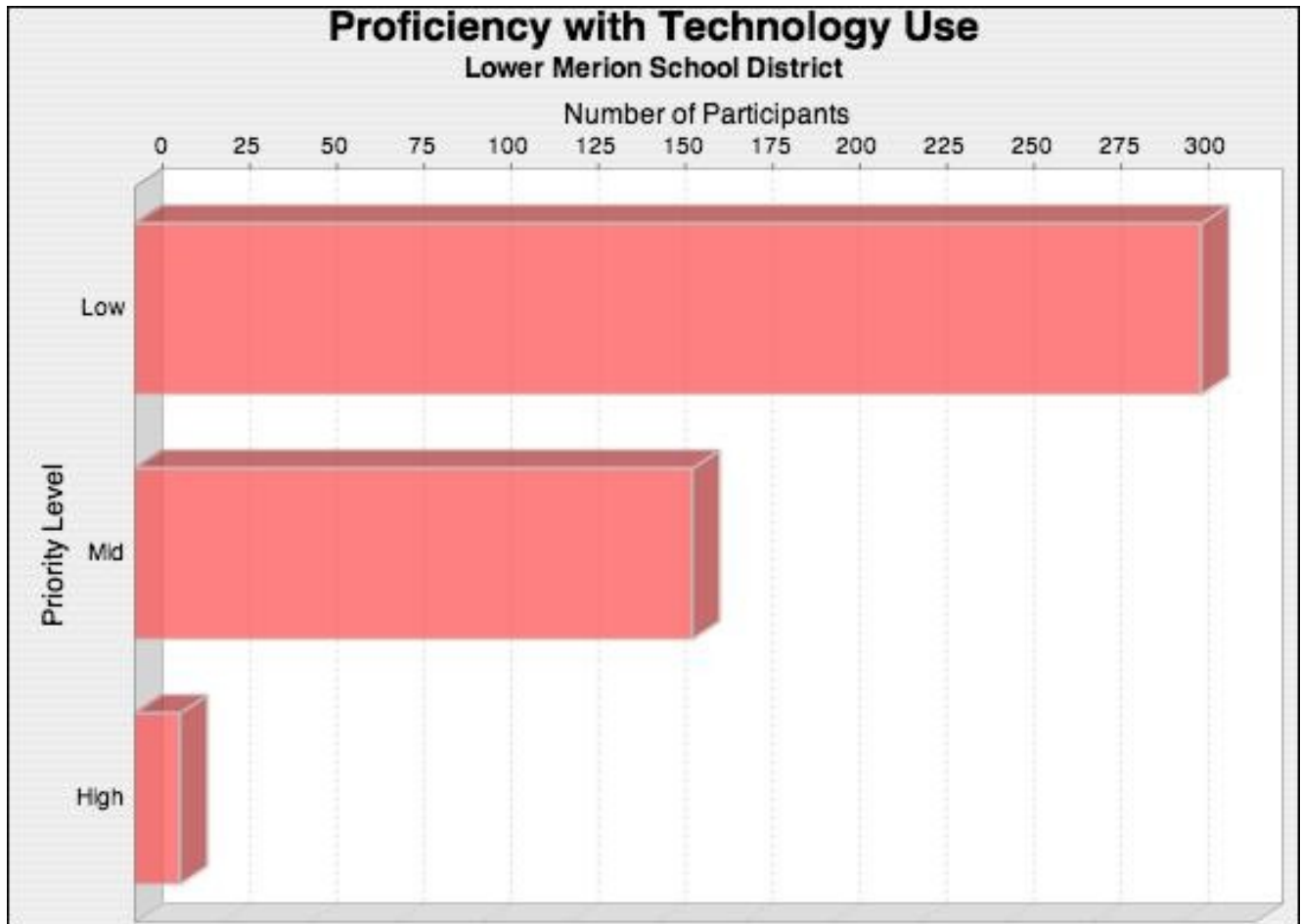


Figure 3: Proficiency with Technology Use

Figure 3 displays the professional development priority levels for the participants from Lower Merion School District involving DETAILS Skillset #1, Proficiency with Technology Use. Based on their responses to the DETAILS Questionnaire, the majority of participants considered Proficiency with Technology Use a Low-Level Priority.

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #1, Proficiency with Technology Use. It is recommended that staff development planners concentrate on other professional development opportunities for staff that do not address technology proficiencies using digital technologies.



DETAILS Skillset #1: Proficiency with Technology Use

DETAILS Skillset #1: Proficiency with Technology Use represents a participant's level of proficiency with digital technologies including productivity tools, web-based applications, communications applications (e.g., email, blogging), multimedia tools, and video media.

21st Century Skills Alignment

Information and Communication Technology (ICT) Literacy

Low-Level Priority

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #1, Proficiency with Technology Use. It is recommended that staff development planners concentrate on other professional development opportunities for staff that do not address technology proficiencies using digital technologies.

Mid-Level Priority

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #1, Proficiency with Technology Use. Even though this skillset is not a high priority, it is still recommended that staff development planners consider providing professional development interventions and/or mentoring opportunities for staff that will help them further improve their confidence and competence with various digital technologies.

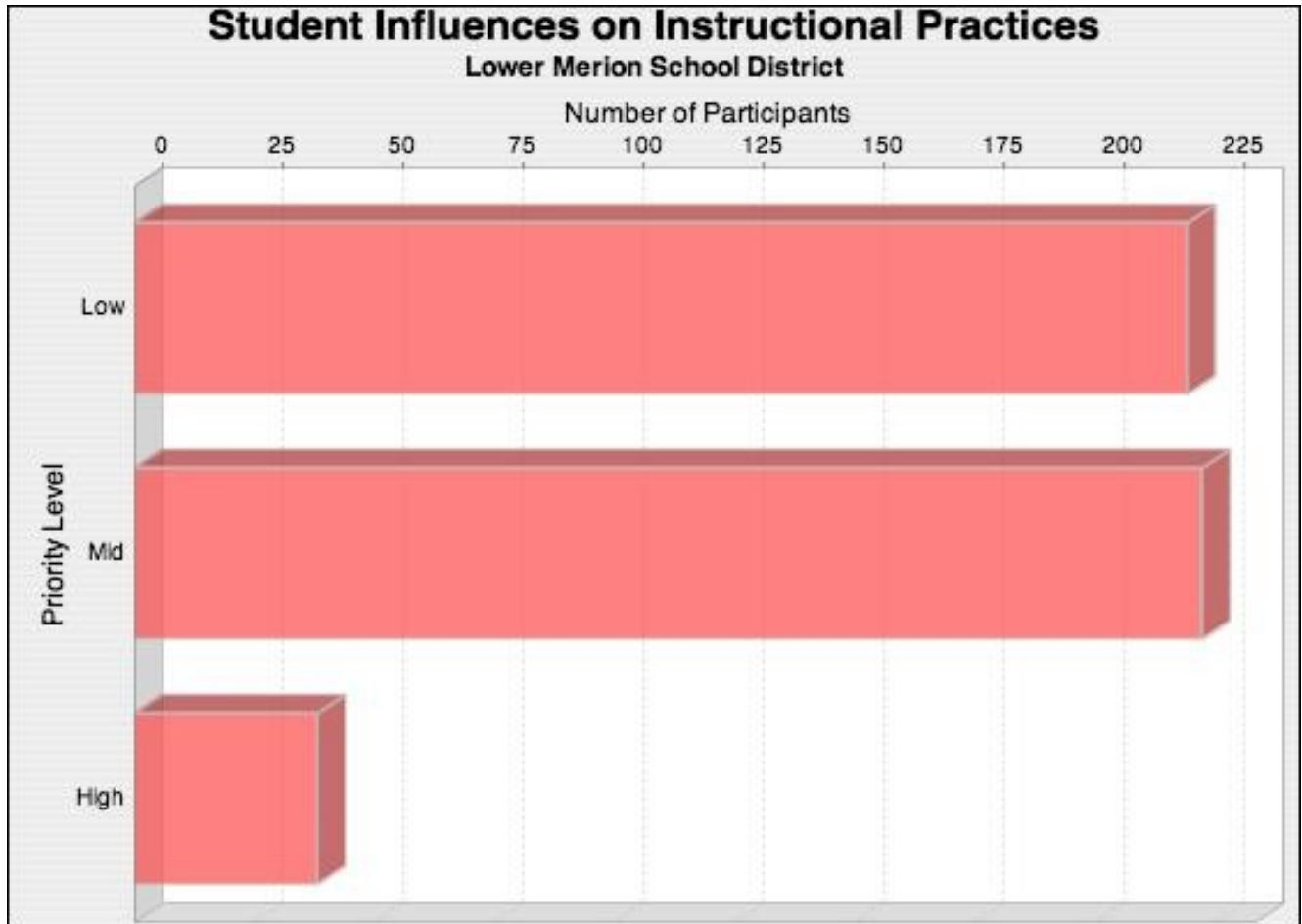
High-Level Priority

A High-Level Priority implies that there is a high-level need for further professional development with DETAILS Skillset #1, Proficiency with Technology Use. Proficiency with Technology Use currently represents a high priority for your organization. It is recommended that staff development planners actively seek professional development interventions and/or mentoring opportunities immediately for staff that will help staff further improve their confidence and competence with various digital technologies.

Figure 4: Student Influences on Instructional Practices

Figure 4 displays the professional development priority levels for the participants from Lower Merion School District involving DETAILS Skillset #2, Student Influences on Instructional Practices. Based on their responses to the DETAILS Questionnaire, the majority of participants considered Student Influences on Instructional Practices a Mid-Level Priority.

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #2, Student Influences on Instructional Practices. Even though this skillset is not a high priority, it is still recommended that staff development planners consider professional development interventions and/or mentoring opportunities for staff that will help them further improve their confidence and competence with student-based learning strategies.



DETAILS Skillset #2: Student Influences on Instructional Practices

DETAILS Skillset #2: Student Influences on Instructional Practices represents a participant's level of proficiency with digital technologies including productivity tools, web-based applications, communications applications (e.g., email, blogging), multimedia tools, and video media.

21st Century Skills Alignment

Interpersonal and Self-Directional Skills

Low-Level Priority

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #2, Student Influences on Instructional Practices. It is recommended that staff development planners concentrate on other professional development opportunities for staff that do not address student-based learning strategies.

Mid-Level Priority

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #2, Student Influences on Instructional Practices. Even though this skillset is not a high priority, it is still recommended that staff development planners consider professional development interventions and/or mentoring opportunities for staff that will help them further improve their confidence and competence with student-based learning strategies.

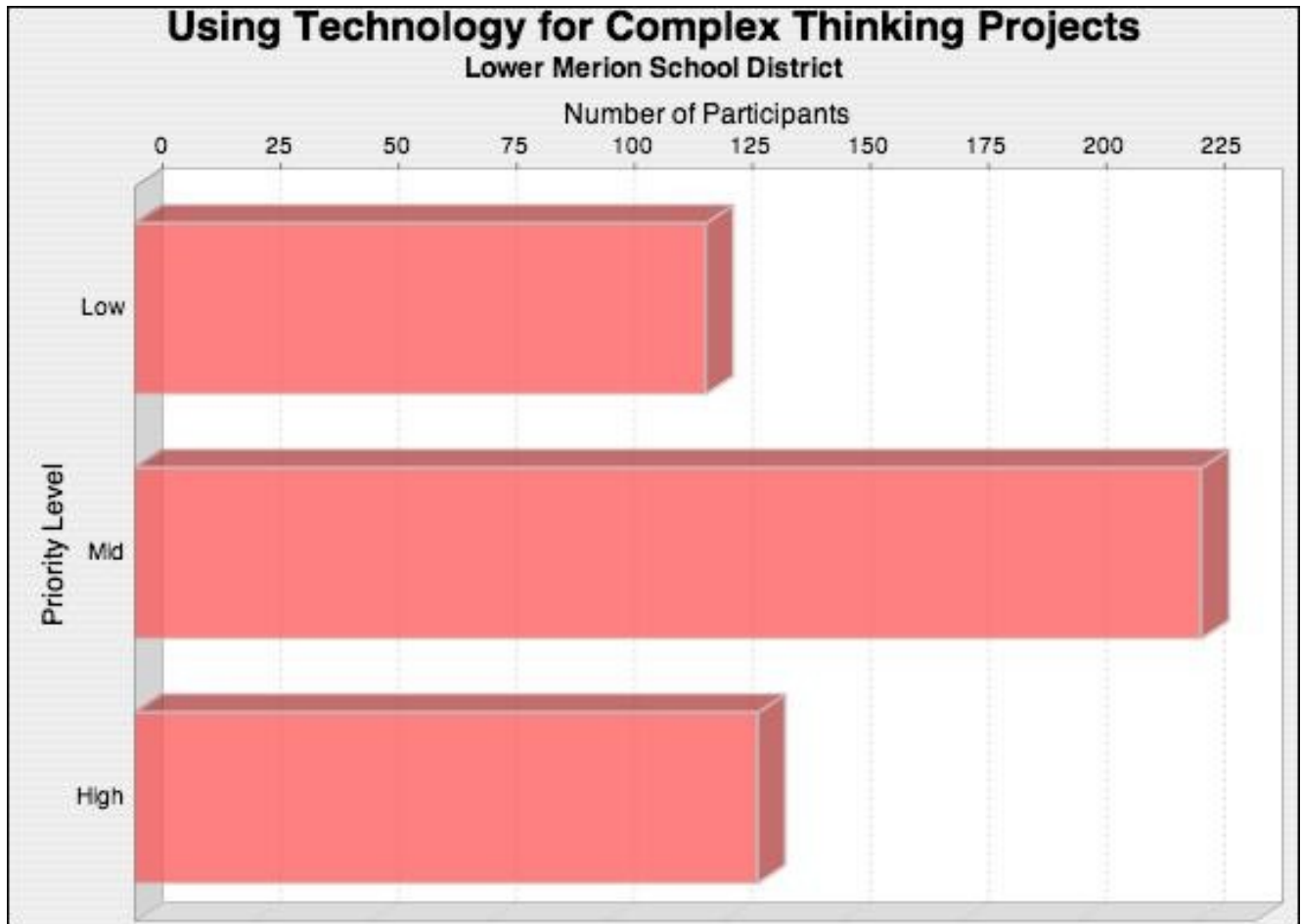
High-Level Priority

A High-Level Priority implies that there is a high-level need for further professional development with DETAILS Skillset #2, Student Influences on Instructional Practices. Student Influences on Instructional Practices currently represents a high priority for your organization. It is recommended that staff development planners actively seek professional development interventions and/or mentoring opportunities immediately for staff that will help them further improve their confidence and competence with student-based learning strategies.

Figure 5: Using Technology for Complex Thinking Projects

Figure 5 displays the professional development priority levels for the participants from Lower Merion School District involving DETAILS Skillset #3, Using Technology for Complex Thinking Projects. Based on their responses to the DETAILS Questionnaire, the majority of participants considered Using Technology for Complex Thinking Projects a Mid-Level Priority.

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #3, Using Technology for Complex Thinking Projects. Even though this skillset is not a high priority, it is still recommended that staff development planners consider professional development interventions and/or mentoring opportunities that will help staff further improve their confidence and competence with complex thinking skill strategies.



DETAILS Skillset #3: Using Technology for Complex Thinking Projects

DETAILS Skillset #3: Using Technology for Complex Thinking Projects describes the need for implementing technology-enriched projects that involve one or more complex thinking skills in either the project's process or the final product. Complex thinking skills include problem-solving, decision-making, creative problem-solving, reasoning, investigation, experimental inquiry, and reflective thinking.

21st Century Skills Alignment

Thinking and Problem-Solving Skills

Low-Level Priority

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #3, Using Technology for Complex Thinking Projects. It is recommended that staff development planners concentrate on other professional development opportunities for staff that do not address complex thinking skill strategies.

Mid-Level Priority

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #3, Using Technology for Complex Thinking Projects. Even though this skillset is not a high priority, it is still recommended that staff development planners consider professional development interventions and/or mentoring opportunities that will help staff further improve their confidence and competence with complex thinking skill strategies.

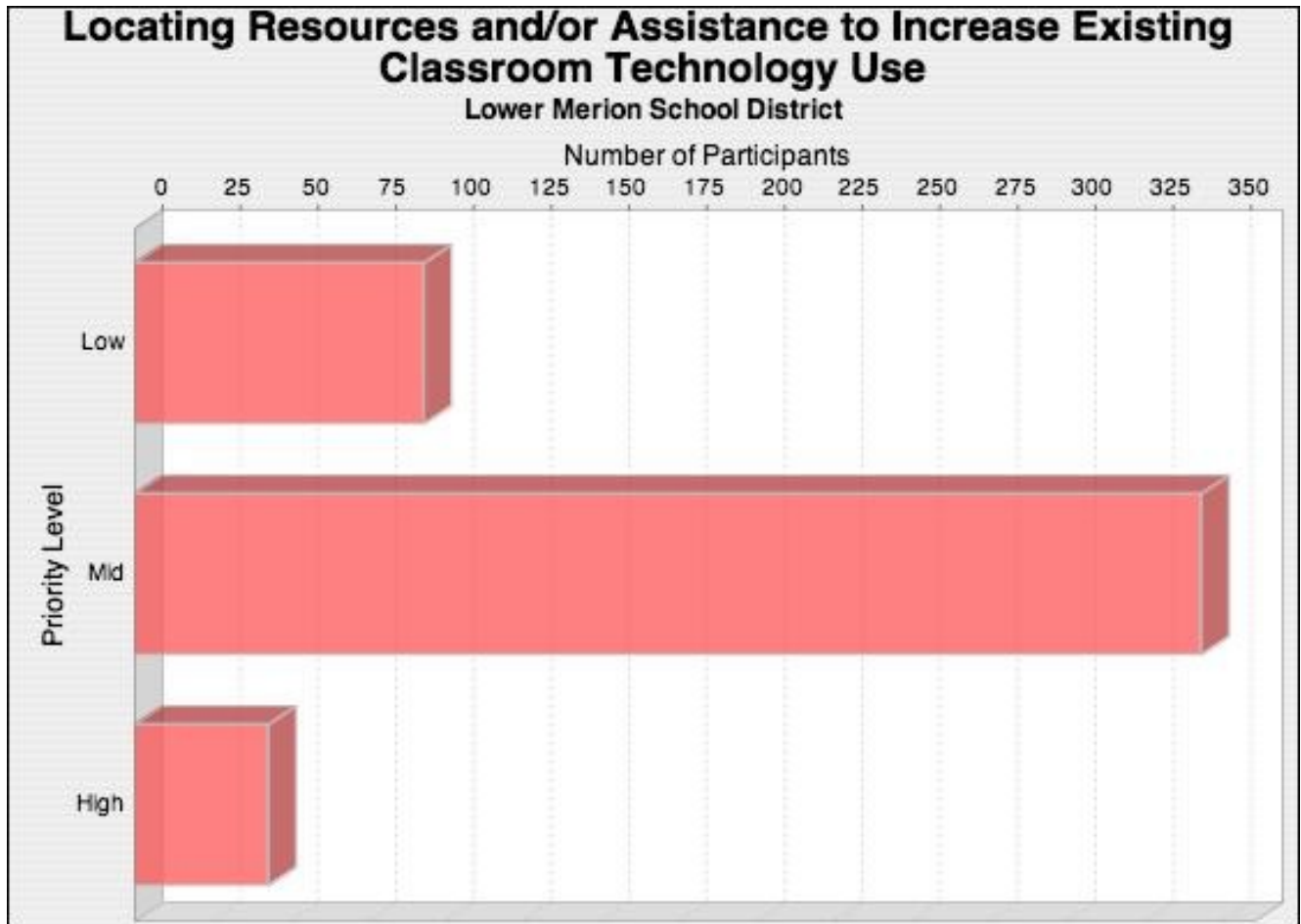
High-Level Priority

A High-Level Priority implies that there is a high-level need for further professional development with DETAILS Skillset #3, Using Technology for Complex Thinking Projects. Using Technology for Complex Thinking Projects currently represents a high priority for your organization. It is recommended that staff development planners actively seek professional development interventions and/or mentoring opportunities for staff immediately that will help them further improve their confidence and competence with complex thinking skill strategies.

Figure 6: Locating Resources and/or Assistance to Increase Existing Classroom Technology Use

Figure 6 displays the professional development priority levels for the participants from Lower Merion School District involving DETAILS Skillset #4, Locating Resources and/or Assistance to Increase Existing Classroom Technology Use. Based on their responses to the DETAILS Questionnaire, the majority of participants considered Locating Resources and/or Assistance to Increase Existing Classroom Technology Use a Mid-Level Priority.

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #4, Locating Resources and/or Assistance to Increase Existing Classroom Technology Use. Even though this skillset is not a high priority, it is still recommended that staff development planners consult with a district or building technology representative or media specialist who can help staff locate additional technology resources or provide them with a potential mentoring partnership.



DETAILS Skillset #4: Locating Resources and/or Assistance to Increase Existing Classroom Technology Use

DETAILS Skillset #4: Locating Resources and/or Assistance to Increase Existing Classroom Technology Use represents a participant's need for additional resources (e.g., software applications, websites, productivity tools, hardware, peripherals) and/or assistance (e.g., working with a peer coach/mentor) to employ technology successfully as part of their classroom instructional practices.

21st Century Skills Alignment

Information and Communication Skills

Low-Level Priority

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #4, Locating Resources and/or Assistance to Increase Existing Classroom Technology Use. It is recommended that staff development planners concentrate on other professional development opportunities for staff that do not address the need for more technology resources or assistance.

Mid-Level Priority

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #4, Locating Resources and/or Assistance to Increase Existing Classroom Technology Use. Even though this skillset is not a high priority, it is still recommended that staff development planners consult with a district or building technology representative or media specialist who can help staff locate additional technology resources or provide them with a potential mentoring partnership.

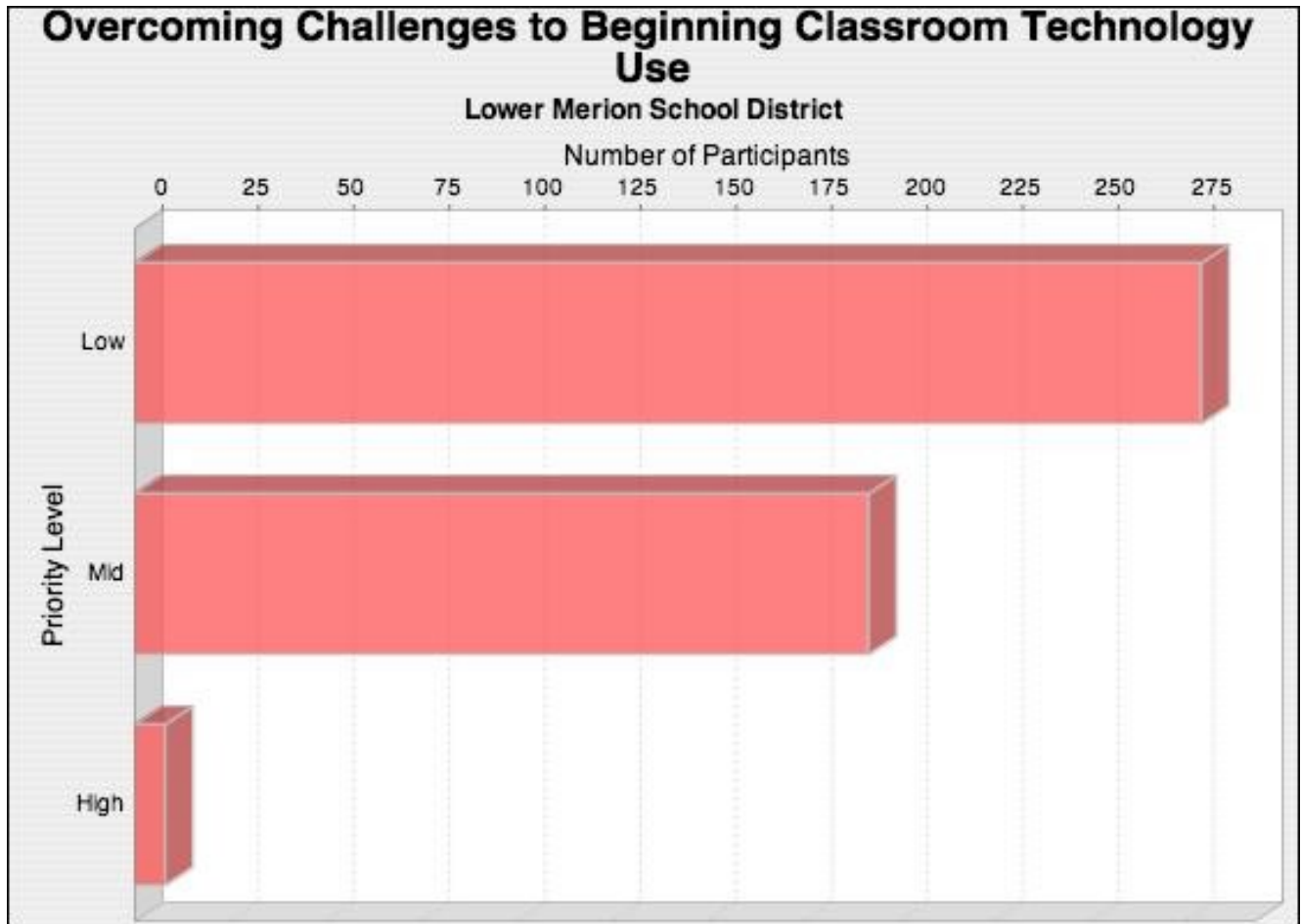
High-Level Priority

A High-Level Priority implies that there is a high-level need for further professional development with DETAILS Skillset #4, Locating Resources and/or Assistance to Increase Existing Classroom Technology Use. Locating Resources and/or Assistance to Increase Existing Classroom Technology Use currently represents a high priority for your organization. It is recommended that staff development planners actively consult with a district or building technology representative or media specialist who can help staff locate additional technology resources or provide them with a potential mentoring partnership.

Figure 7: Overcoming Challenges to Beginning Classroom Technology Use

Figure 7 displays the professional development priority levels for the participants from Lower Merion School District involving DETAILS Skillset #5, Overcoming Challenges to Beginning Classroom Technology Use. Based on their responses to the DETAILS Questionnaire, the majority of participants considered Overcoming Challenges to Beginning Classroom Technology Use a Low-Level Priority.

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #5, Overcoming Challenges to Beginning Classroom Technology Use. It is recommended that staff development planners concentrate on other professional development opportunities for staff that extend beyond initial technology use in the classroom.



DETAILS Skillset #5: Overcoming Challenges to Beginning Classroom Technology Use

DETAILS Skillset #5: Overcoming Challenges to Beginning Classroom Technology Use involves overcoming barriers that prevent individuals from using technology in their classroom. Some of these barriers include (1) lack of hardware/software, (2) high-stakes testing, (3) lack of training, and/or (4) lack of support.

21st Century Skills Alignment

Information and Communication Technology (ICT) Literacy

Low-Level Priority

A Low-Level Priority implies that there is a low-level need for further professional development with DETAILS Skillset #5, Overcoming Challenges to Beginning Classroom Technology Use. Your staff's aggregate DETAILS Questionnaire data suggests that your staff is already using technology for instructional purposes. It is recommended that staff development planners concentrate on other professional development opportunities for staff that extend beyond initial technology use in the classroom.

Mid-Level Priority

A Mid-Level Priority implies that there is a mid-level need for further professional development with DETAILS Skillset #5, Overcoming Challenges to Beginning Classroom Technology Use. Even though this skillset is not a high priority, it is still recommended that staff development planners investigate any professional development and/or mentoring opportunities that will help staff become comfortable and confident with implementing digital technologies in the classroom.

High-Level Priority

A High-Level Priority implies that there is a high-level need for further professional development with DETAILS Skillset #5, Overcoming Challenges to Beginning Classroom Technology Use. Overcoming Challenges to Beginning Classroom Technology Use currently represents a high priority for your organization. It is recommended that staff development planners investigate any professional development and/or mentoring opportunities that will help staff become comfortable and confident with implementing digital technologies in the classroom.



Inquiries

Specific recommendations for professional development can be accessed at the LoTi Connection website (<http://www.loticonnection.com/>) under LoTi Services or at the LoTi Lounge website (<http://www.lotilounge.com/>) in the section entitled, LoTi Resources.

The National Business Education Alliance, a non-profit 501 (c) 3 organization, provides customized professional development programs for school systems nationwide addressing whole school reform, technology integration, curriculum development, and student assessment practices. For more information about these professional development opportunities for your organization, please contact the National Business Education Alliance directly.

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